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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/063,143	03/25/2002	Susan Rebecca Cikanek	200-1201 CLH	2717

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EXAMINER

KING, BRADLEY T

ART UNIT	PAPER NUMBER
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3683

DATE MAILED: 06/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/063,143

Applicant(s)

CIKANEK ET AL.

Examiner

Bradley T King

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 5-6 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5 recites "said speed of said vehicle". There is insufficient antecedent basis for this limitation in the claims. Claim 4 recites "a speed of said motor/generator". It is unclear if this is the same as the vehicle speed.

Claim 19 recites the method step of "said regenerative braking torque is reduced as said master cylinder pressure increases, after said master cylinder pressure exceeds a predetermined value". The specification discloses that the regenerative torque is limited by the maximum brake force "lock-up" resulting in a reduced regenerative braking torque at higher brake pressures, but it does not appear to be an active step directly correlating to the master cylinder pressure as the limitation appears to imply. It is also unclear what the "predetermined value" corresponds to. Please clarify.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claims 1-5, 9, and 14-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Taga et al (US#5915801).

Taga et al disclose all the limitations of the instant claims including: a braking system including an engine 10, a first clutch 16, a transaxle assembly (12, 18) effective to recover energy during certain braking events, and a control system 24 which controls the first clutch and which selectively disengages the first clutch during the certain braking events (see column 3, lines 60-64).

Regarding claims 2 and 14, Taga et al disclose an accelerator pedal and the control system selectively disengages the first clutch and causes the transaxle to provide a simulated compression braking force. See figure 2.

Regarding claims 3-4, see figures 3-4.

Regarding claim 5, see figure 8. Target deceleration and therefore braking force decreases with vehicle speed.

Regarding claim 9, Taga et al further disclose a hybrid vehicle including a pair of wheels 14 (column 3, lines 37-43).

Claims 1-4, 7-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Phillips et al (US#6543565).

Phillips et al disclose all the limitations of the instant claims including: a braking system including an engine 20, a first clutch 24, a transaxle assembly (22, 28) effective to recover energy during certain braking events, and a control system 24 which controls the first clutch and which selectively disengages the first clutch during the certain braking events (the REGEN LOW VEL state).

Regarding claims 2 and 15, Phillips et al disclose an accelerator pedal and the control system selectively disengages the first clutch and causes the transaxle to provide a simulated compression braking force. See column 3, lines 51-52.

Regarding claims 7, 10, 18 and 19, see column 5, lines 38-40. Regarding claim 19, the regenerative braking torque is inherently reduced when the brake pressure causes the wheel to slip.

Regarding claims 8 and 17, see column 3, line 41.

Regarding claim 9, Phillips et al further disclose a hybrid vehicle including a pair of wheels 14 (Figure 1).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6-8, 10-13 and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taga et al (US#5951801) in view of Kidston et al (US#5615933).

Regarding claim 6, Taga et al discloses all the limitations of the instant claim with exception to reducing the regenerative braking force linearly when the vehicle speed decreases below a predetermined value. Taga et al suggest several different control modes to achieve various desired braking characteristics. Taga et al further disclose reducing the target deceleration with reducing vehicle speed (figure 8). Kidston et al teach a similar system where the regenerative braking decreases linearly with vehicle speed below a certain speed (figure 11 line 140) to give the "feel" of a conventional vehicle. It would have been obvious to one of ordinary skill in the art at the time the invention was made to reduce the regenerative braking torque linearly with vehicle speed in the system of Taga et al as taught by Kidston et al to increase driver comfort.

Regarding claims 7, 10-12 and 18-19, Taga et al disclose all the limitations of the instant claims with exception to the explicit disclosure of using master cylinder pressure to control the regenerative and friction braking. Taga et al do disclose utilizing a braking leg power signal, but remain silent as to how the signal is generated. Measuring master cylinder pressure to indicate braking demand is well known in the art and further taught by Kidston et al (column 6, lines 52-67). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize a measurement of the master cylinder pressure as taught by Kidston et al to provide the braking leg power signal of Taga et al as an obvious and well known means of measurement.

Regarding claims 8 and 17, Taga et al disclose all the limitations of the instant claims with exception to the control of the regenerative and friction braking based on the state of charge of the battery. Kidston et al teach the use of the state of charge of a battery to modify the control of friction and regenerative braking (column 6, lines 19-24). It would have been obvious to one of ordinary skill in the art at the time the invention was made to detect the state of charge of the battery of Taga et al as taught by Kidston et al to prevent excessive charging and damage to the battery, motor/generator, and control system.

Regarding claim 13, Taga et al disclose all the limitations of the instant claims with exception to the explicit disclosure of using master cylinder pressure to control the regenerative and friction braking and the control of the regenerative and friction braking based on the state of charge of the battery. Taga et al do disclose utilizing a braking leg power signal, but remain silent as to how the signal is generated. Measuring master cylinder pressure to indicate braking demand is well known in the art and further taught by Kidston et al (column 6, lines 52-67). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize a measurement of the master cylinder pressure as taught by Kidston et al to provide the braking leg power signal of Taga et al as an obvious and well known means of measurement. Kidston et al also teach the use of the state of charge of a battery to modify the control of friction and regenerative braking (column 6, lines 19-24). It further would have been obvious to one of ordinary skill in the art at the time the invention was made to detect the state of

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charge of the battery of Taga et al as taught by Kidston et al to prevent excessive charging and damage to the battery, motor/generator, and control system.

Claims 5-6 are rejected under 35 U.S.C. 103(a) as being obvious over Phillips et al (US#6543565) in view of Kidston et al (US#5615933).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(I)(1) and § 706.02(I)(2).

Phillips et al et al discloses all the limitations of the instant claim with exception to reducing the regenerative braking force linearly when the vehicle speed decreases below a predetermined value. Phillips et al suggests calibrating the torque levels for desired performance feel (column 5, lines 40-43), but remain silent as to the details. Kidston et al teach a similar system where the regenerative braking decreases linearly with vehicle speed below a certain speed (figure 11 line 140) to give the "feel" of a conventional vehicle. It would have been obvious to one of ordinary skill in the art at the time the invention was made to reduce the regenerative braking torque linearly with vehicle speed in the system of Phillips et al as taught by Kidston et al to increase driver comfort.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sway-Tin et al and Schneider. Both show regenerative braking systems.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bradley T King whose telephone number is (703) 308-8346. The examiner can normally be reached on 11:00-7:30 M-F.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.

BTK
June 14, 2003


JACK LAVINDER
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